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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/046,405	01/16/2002	Minoru Aoyama	2002_0008A	2075
513	7590	11/24/2003	[REDACTED]	[REDACTED] EXAMINER ALEJANDRO, RAYMOND
WENDEROTH, LIND & PONACK, L.L.P. 2033 K STREET N. W. SUITE 800 WASHINGTON, DC 20006-1021			[REDACTED] ART UNIT 1745	[REDACTED] PAPER NUMBER

DATE MAILED: 11/24/2003

12

Please find below and/or attached an Office communication concerning this application or proceeding.

CLO 12

Office Action Summary	Application No.	Applicant(s)
	10/046,405	AOYAMA, MINORU
	Examiner Raymond Alejandro	Art Unit 1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 31 October 2003.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1,2,4-13 and 21-26 is/are pending in the application.
- 4a) Of the above claim(s) 2,4-6,9,11,13 and 21-26 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1,7,8,10 and 12 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on 31 October 2003 is: a) approved b) disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

This communication is responsive to the amendment filed 10/31/03. The applicant has overcome the objections. However, the present claims remain rejected as the 35 USC 102 rejection and the 35 USC 103 rejection still stand for the reasons of record. Thus, the claims are finally rejected.

Election/Restrictions

1. Newly amended claims 2, 4-6, 9-11 and 13 and newly submitted claims 21-26 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: it is noted that claims 1, 7-8, 10 and 12 remain directed (*as originally presented*) to “A battery unit” per se (classified in class 429/99) while newly amended and submitted claims 2, 4-6, 9-11, 13 and 21-26 are drawn to “A battery installation housing” itself (classified in class 429/100). Accordingly, it is also contended that the battery unit and the battery installation housing are related to one to another as subcombinations usable together each one having separate utility, for instance, the battery unit is for generating electrochemical energy while the battery installation housing provides a support or a holding use per se.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 2, 4-6, 9-11, 13 and 21-26 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

2. This application contains claims 2, 4-6, 9-11, 13 and 21-26 are drawn to an invention nonelected for the reasons above. A complete reply to the final rejection must include cancelation of nonelected claims or other appropriate action.

Drawings

3. The corrected or substitute drawings were received on 10/30/03. These drawings are acceptable.

Specification

4. The substitute specification filed 10/31/03 has been entered.

Claim Rejections - 35 USC § 102

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1, 10 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Stoklosa et al 4920019.

The instant application is directed to an assembled battery unit wherein the disclosed inventive concept comprises the specific battery holding arrangement. Other limitations include the circuit board; the slits and ribs; the lead plates; the thin battery cells; the holding plate area; the soldered lead plates; the adhesive and the lead plate arrangement; the lithium polymer battery and the common circuit board-holding plate structure.

With reference to claim 1:

Stoklosa et al disclose a battery pack assembly having a circuit board (TITLE) wherein the battery pack is made by grouping a plurality of cells, positioning a common circuit board adjacent terminals of the cells (COL 1, lines 9-15). The common circuit board is positioned adjacent terminals of the cells and a lead element is soldered to each terminal and to a portion of the circuit board (COL 1, lines 9-15). Each cell must be individually pretabbed, it must have two conductive leads attached by soldering, one from the positive terminal and one from the negative terminal (COL 1, lines 14-18). The completed laminated circuit board is employed to form a battery pack assembly by combining it with a series of eight galvanic cells or batteries. The plurality of cells are arranged in a pattern or grouping such that when the circuit board is placed thereon, each pair of tabs 25 overlies the respective negative and positive terminals or posts of the battery adjacent thereto as illustratively depicted in Figure 8 below. Then, by applying to the tabs a deflecting biasing force, the tabs will be bent slightly to engage the battery terminals and secured to the battery terminals by welding to physically secure them to each other (COL 4, lines 37-50).

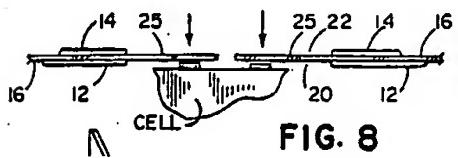


FIG. 8

Stoklosa et al disclose that the circuit board includes at least one, and preferably two pre-perforated insulator sheets and a pre-perforated metal layer laminated between the insulator sheets in sandwich fashion (COL 1, lines 35-38). Accordingly, the laminated circuit board 10 is formed of lower insulation sheet 12 and upper insulation sheet 14 and an intermediate metal foil layer 16 therebetween (COL 2, lines 26-35).

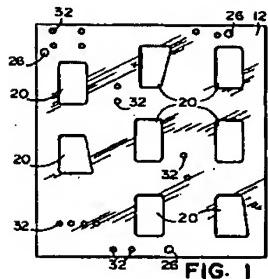


FIG. 1

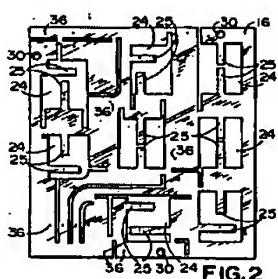


FIG. 2

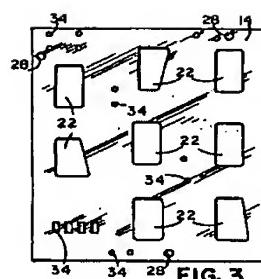


FIG. 3

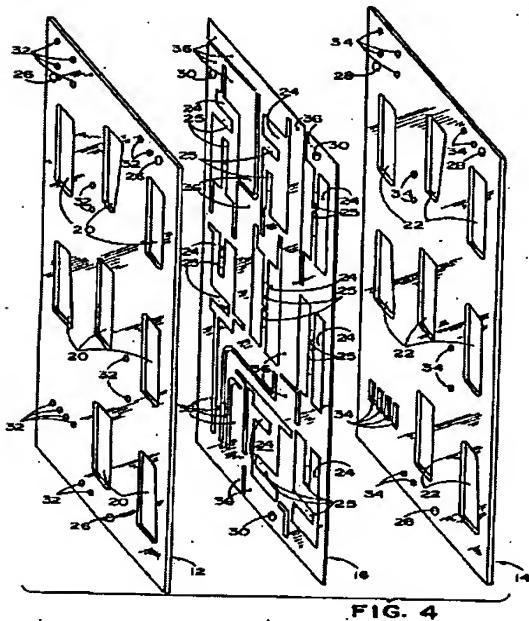


FIG. 4

Figures 1, 2, 3 above depict three layer component to be combined wherein the layers as combined are illustrated in Figure 4 above.

It is apparent from Figures 1-4 that clearance openings 20 are of a size and configuration to fit over the top of the terminals of a series of galvanic cells or batteries, in this case eight in number. Thus, there are eight openings 20 generally rectangular in configuration and large enough to extend around the periphery of the two terminals, positive and negative, of each battery (COL 2, line 67 to COL 3, line 5). Openings 22 in the upper insulation sheet 14 and opening 24 in the intermediate metal foil layer 16 are provided corresponding in number and location to openings 20 in the lower insulation sheet 12 (COL 3, lines 41-45).

Therefore, the eight openings 20, 22, 24 in respective sheets 12, 14 and 16 hold the battery cells. It is also noted that one of either the lower insulation sheet 12 or the upper insulation sheet 16 provides a configuration to hold or retain cells, thus, they act acts as the holding plate for holding the cells. Hence, the examiner has interpreted that one of the two insulation sheets serves as a holding plate per se. In addition, a common circuit board is positioned adjacent the cell terminals, wherein a lead element is connected to each terminal and to a portion of the circuit board.

Stoklosa et al disclose that other electrical components can be electrically connected to the circuit portions of the metal layer by extending connector elements through orifices 32 and pressing them through orifices 36 to form a friction fit with the metal layer (COL 4, lines 52-57). The lower insulation sheet 12 is formed with a series of alignment holes 26, a set of connection orifices 32 (COL 2, lines 63-66). These holes coincide with two or more like holes 28 in sheet 14, located in the same pattern and of the same size. When the two sheets are placed one upon the other, the three holes in each sheet coincide to receive alignment pins. These pins can be used to cause these sheets to be in alignment. Alternatively, two or more protrusions could be formed into the insulation sheets to fit into like positioned holed in the intermediate metal layer for alignment and, if desired, securement therewith (COL 3, lines 13-23). Stoklosa et al also disclose that a third set of connecting orifices is provided in both sheets, these openings are coincident with the lower sheet 12 and upper sheet 14. The purpose of these orifices is to allow electrical connection between the metal foil and overlying components in the battery pack to be assembled. This can be done by extending a connecting member such as a wire lead of an electronic component, through the metal (COL 3, lines 24-36). *Thus, the slit has a positioning rib provided*

on the circuit board housing (insulation sheets and metal foil layer) where the assembled battery units is incorporated.

Stoklosa et al disclose that the three components 12, 14, 16 are then assembled together to laminate the components. This may be done by adhesively coating to bond the three layers into one integral structure 40 as depicted in Figure 5 below.

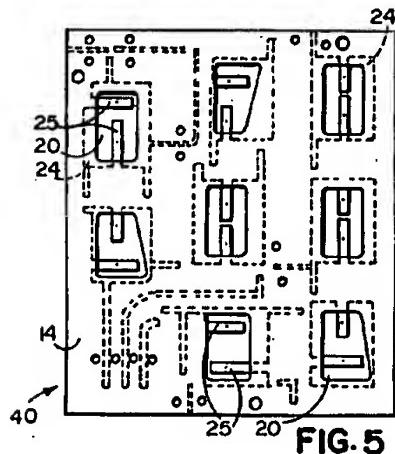


FIG. 5

With reference to claim 10:

Each cell must be individually pretabbed, it must have two conductive leads attached by soldering, one from the positive terminal and one from the negative terminal (COL 1, lines 14-18). The common circuit board is positioned adjacent terminals of the cells and a lead element is soldered to each terminal and to a portion of the circuit board (COL 1, lines 9-15).

Regarding claim 12:

The plurality of cells are arranged in a pattern or grouping such that when the circuit board is placed thereon, each pair of tabs 25 overlies the respective negative and positive terminals or posts of the battery adjacent thereto as illustratively depicted in Figure 8 above. *It is apparent from Figures 2 and 4 that the positive lead plates and negative lead of at least two (2) adjacent cells are arranged alternatively as positive lead plates and negative lead plates.*

Thus, the claims are anticipated.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
2. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stoklosa et al 4920019 as applied to claim 1 above, and further in view of Hope et al 5422200.

Stoklosa et al is applied, argued and incorporated herein for the reasons above. However, Stoklosa et al do not disclose the specific lead plate configuration; the thin battery cells; the adhesive; and the lithium-polymer batteries.

With respect to claim 7-8:

Hope et al disclose a battery packaging construction for multiple cell alkali metal batteries comprising a plurality of flat battery cells, which have leads extending therefrom (ABSTRACT). Figure 2 below shows a battery which is constructed of a plurality of cells 10 with leads 15A and 15B (COL 3, lines 7-12/ COL 2, lines 56-58). *It is apparent from Figure 2 that the leads 15A and 15B extend from the battery surface in a parallel arrangement.*

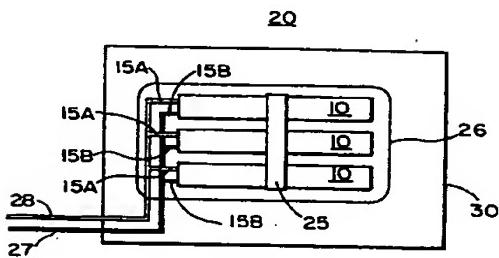


FIG. 2

Hope et al disclose the battery packaging construction has a plurality of flat battery cells (ABSTRACT/ COL 2, lines 56-58). *It is noted that flat battery are also known in the art as thin flat battery because the battery has little depth with respect to the width and depth.*

Hope et al teach that the battery 20 which is constructed of a plurality of cells 10 are electrically connected together by electrically conductive tape or adhesive, or adhesive transfer tape of well known type; or the cell stack held together with a band of tape of by an adhesive layer between them (COL 3, lines 11-17).

It is taught that the single battery cell is of the lithium-polymer type (COL 2, lines 50-53).

In view of the above, it would have been obvious to one skilled in the art at the time the invention was made to make the specific lead plate configuration of Hope et al in the assembled battery of Stoklosa et al as Hope et al teach that leads extending from the single cell allow the single cell itself to have the leads electrically connected in series or parallel to terminals. Thus, the specific lead plate configuration as claimed would provide a battery package construction exhibiting satisfactory electrical connection and electrically connecting leads from the multiple cells to an external electrical current carrying member of the battery so that generated electrical energy be drawn and directed to an energy powered device. *Additionally, it has been held that changes in shape are obvious In re Dailey 149 USPQ 47 (CCPA 1966).*

With respect to the thin battery cells, it would have been obvious to one skilled in the art at the time the invention was made to use the flat (thin) battery cells of Hope et al in the assembled battery of Stoklosa et al as Hope et al teach that by using flat battery cells in the battery packaging construction for multicelled batteries a lightweight product (battery assembly) is obtained. Further, thin battery cells are also desirable in the multicelled battery field because thin battery cells provide battery packaging construction which can accommodate a large numbers of cells in a compact durable product. *Additionally, it has been held that making articles adjustable is obvious In re Stevens 101 USPQ 284 (CCPA 1954).*

As to the adhesive, it would have been obvious to one skilled in the art at the time the invention was made to use adhesive of Hope et al to fix the battery cells of Stoklosa et al because Hope et al teach that cells can be electrically connected together in series or parallel by electrically conductive tape or adhesive, or adhesive transfer tape of well known type. Accordingly, cells can be held together with at least one band of tape or by an adhesive layer between them. *Hope et al's teaching is also consistent with the disclosure of Stoklosa et al that components can be assembled together by coating the mating surfaces thereof with a suitable adhesive to bond the components into one integral structure. Thus, an adhesive securing feature can be employed in the assembled battery unit to protect the cells from accidentally moving or displacing.*

As far as the lithium-polymer batteries, it would have been obvious to one skilled in the art at the time the invention was made to use the lithium-polymer batteries of Hope et al in the assembled battery of Stoklosa et al because Hope et al teach his invention provide battery packaging construction for multicelled batteries which is particularly suitable for alkali metal

batteries. Accordingly, the lithium-polymer type cell of Hopes et al provides a durable multicelled battery unit. *Thus, Hope et al directly teach the use of a lithium-polymer battery provides a durable multicell battery.*

Response to Arguments

Applicant's arguments filed 10/31/03 have been fully considered but they are not persuasive. The main contention of applicant's arguments is premised on the assertion that the prior art of record "fails to disclose or suggest that the batteries are fixed to either the upper insulation sheet or the lower insulation sheet". However, this assertion is not sufficient to overcome this rejection because the term "fix" (*as interpreted by the examiner and by definition*) has been construed as "to make firm, stable or stationary", therefore, the batteries of the prior art meet the claimed condition of being fixed therein as they are physically held in place or kept stationary by physical means as illustrated in Figures 5 and 8. Thus, since applicant has not further claimed any particular attaching, fastening, joining or holding structure, the claims are deemed to be anticipated by the prior art.

As far as the argument that the intermediate metal foil layer 16, the upper insulation sheet 14 and the lower insulation sheet 12 are integrally formed as the integral structure 40 and not separate from each other, the examiner likes to state that although the prior art of record shows the structure 40 is an integral one, Figure 4 clearly shows that such structure 40 consists of three (3) separate, divided, detached, distinct, individual, single or discrete components (*namely, the insulator sheets 12 and 14 and the metal layer 16*) that are assembled together and laminated so that they are bonded into one structure. Consequently, it is further contended that such

components are individually constructed, made or manufactured, and thus, they do have distinct and distinguishable characteristics from each other as the holding plate and the common circuit board of the instant invention. Hence, the teachings of the prior art provide the necessary structural interrelationship to satisfy the claim language requirement.

The examiner is not addressing applicant's argument with respect to claims 2, 4-6, 9-11, 13 and 21-26 because they are directed to a non-elected invention which is independent and distinct from the invention originally claimed.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond Alejandro whose telephone number is (703) 306-3326. The examiner can normally be reached on Monday-Thursday (8:30 am - 7:00 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on (703) 308-2383. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Raymond Alejandro
Examiner
Art Unit 1745



STEPHEN KALAFUT
PRIMARY EXAMINER
GROUP 1700